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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION III
CENTRAL REGIONAL LABORATORY
201 DEFENSE HIGHWAY
SUITE 200
ANNAPOLIS, MARYLAND 21401

QUALITY
ASSURANCE
BRANCH

DATE : June 29, 1994

SUBJECT: North Penn Area 12 - Quality Assurance Project Plan &
Field Sampling Plan (FY94145)

FROM : Monica D. Jones, Environmental Scientist
Program Support Section (3ES32)

TO : Patrick McManus
SE PA Section (3HW21)

The Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for the North Penn Area 12 site has been reviewed for overall technical adequacy and for compliance with QAMS 005/80. Each of the required Quality Assurance Project Plan (QAPP) elements have been addressed.

The FSP and QAPP reference the use of Special Analytical Services (SAS) for the analysis of samples which can not be analyzed using Routine Analytical Services (RAS). As you are aware, the SAS process has been replaced by the Delivery of Analytical Services (DAS) process. Any reference in the QAPP or FSP to SAS should be replaced with DAS. Also, the SAS requests which were included in the SAP should be submitted using the new DAS process.

In addition, the QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. The document indicates that these services will be provided by a soil sampling subcontractor. Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan (LQAP), which addresses the following elements: analytical methods, calibration procedures, QA objectives, data reduction, internal QC checks, sample custody, preventive maintenance, corrective action and audit procedures.

For additional information, please refer to the attached Quality Assurance Project Plan Review checklist. If you have any further questions, in reference to this review, please feel free to contact me at (410) 573-6847.



Environmental Protection Agency
Region III

Revision No.: 4
Date: 1/3/91
Page: 1 of 16

Quality Assurance Project Plan Review

Site Name: North Penn - Area 12
Document Title(s): Field Sampling Plan and
Quality Assurance Project Plan
Requester Name: Patrick McManus
Title: RPM

Account No: TFA03N9W5
Document Number: FY94145

Mail Code: 3HW21
Phone No.: (215) 597-8257

Plan Prepared by: CH2M Hill

Date Received: 6/2/94

Date Requested by: 6/24/94

Program:	..X..CERCLAREMOVAL	..X..Fund-Lead
RCRA	..X..REMedialENF-Lead
Other (Specify)SIState-Lead

Summary

	Y	N
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Does Plan provide sufficient documentation - enough
information so reviewer (and others) knows what will
be done, by whom, etc?

..X..
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Has document been correctly applied (comply with
applicable regulation or guidance)?

..X..
-------	-------

Does document accomplish what it is supposed to?

..X..
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Major Deficiencies were found in the following elements:

...Title page	...QA Objectives	...Analytical Proc.	...Prev. Main.
...Table of Contents	...Sampling Proc.	...Data Reduction	...Data SOPs
...Project Descrip.	...Sample Custody	...Internal QC Ck.	...Corr. Action
...Org. and Resp.	...Calib. Proced.	...Audits	...QA Reporting

See the attached for discussion of comments relative to all elements.

Conclusion/Recommendation:

Approval	.....
Resubmission	.....
Conditional	..X..

QA Reviewer: Monica D. Jones

Data Review Complete: 6/29/94

AR000687

Identification

IA IU NI NA

1) Title page

Does page include:

- 1 - Title of project?
- 2 - Name(s) of principal investigators and affiliates shown?
- 3 - Appropriate approval lines at bottom?
- 4 - Plan prepared in document control format?

..X...	.....	.....	.....
..X...	.....	.....	.....
.....	..1...	.....	.....
..X...	.....	.....	.....

II) Table of Contents

Does Table include:

- 1 - List of all Plan required elements and appropriate page numbers?
- 2 - Include distribution list?
- 3 - Include list of Appendices?

..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....

Note: IA = Included & Acceptable
IU = Included & Unacceptable
NI = Not included
NA = Not applicable

Comments:

1. The approval sheet should be signed by the CH2M Hill SM and CH2M Hill's Designated QA Officer.

AR000688

III) Project Description

IA IU NI NA

Are the following addressed (or referenced),
consistently presented, technically correct?

1 - Statement of general objectives (purpose)?	..X...	.....	.....	.....
2 - Dates for start and completion of project and sampling activities (schedule)?	..X...	.....	.....	.....
3 - Overview of project's scope (activities)?	..X...	.....	.....	.....
4 - Specific objectives for this phase of work?	..X...	.....	.....	.....
5 - Background information?	..X...	.....	.....	.....
5a - Description of site?	..X...	.....	.....	.....
5b - Site History (operational, legal, remedial efforts)?	..X...	.....	.....	.....
6 - Brief statement of intended data uses?	..X...	.....	.....	.....
*7 - Description of sampling network design and rationale?	..X...	.....	.....	.....
7a - Design of overall monitoring systems?	..X...	.....	.....	.....
7b - Specific location of sampling sites?	..X...	.....	.....	.....
7c - Justification of overall design?	..X...	.....	.....	.....
*8 - Sample matrices?	..X...	.....	.....	.....
*9 - Sample locations?	..X...	.....	.....	.....
*10 - Parameters to be measured?	..X...	.....	.....	.....
*11 - Frequency of collection?	..X...	.....	.....	.....
*12 - Field and lab measurements?	..X...	.....	.....	.....
13 - Procedures for groundwater sample preparation, or other similar fractions/sub-groups specified and included in parameter definition?	..X...	.....	.....	.....
14 - Type of sample(s) (grab, composite, etc.)?	..X...	.....	.....	.....
15 - Are data needs relative to data uses addressed? (Will the data answer specific objectives?)	..X...	.....	.....	.....

*Depending on the Program and/or project, information related to sampling may be discussed under Project Description (Section III) or Sampling Procedures (Section VI) in the QAPjP or in a separate Field Sampling Plan - the questions apply regardless of format.

Comments:

AR000689

IV) Project Organization

	IA	IU	NI	NA
1 - Does the Plan identify key people responsible for:				
1a - Overall QA/QC?	..X...	.....	.....	.....
1b - Sampling operations and sampling QC?	..X...	.....	.....	.....
1c - Laboratory analyses and laboratory QC?	..X...	.....	.....	.....
1d - Data processing and data processing QC?	..X...	.....	.....	.....
1e - Data review oversight?	..X...	.....	.....	.....
1f - Performance and System Audits? (Lab and Field)	..X...	.....	.....	.....
2 - Does the QAPjP define who performs:				
2a - Data review?	..X...	.....	.....	.....
2b - Review and confirmation of any tentatively identified organic compounds?	..X...	.....	.....	.....
2c - If CLP, preparation and final review of DAS requests?	..X...	.....	.....	.....
3 - Are phone numbers and addresses included?	..X...	.....	.....	.....
4 - Is line authority for all referenced organizations explained or demonstrated by including an organizational chart(s)?	..X...	.....	.....	.....
4a - Are contractors and subcontractors included in organizational chart?	.....	..1...	.....	.....
5 - Are personnel qualifications included? training? Experience? Resumes?	..X...	.....	.....	.....
6 - Is the organizational structure appropriate to accomplish the QA objectives of the project?	..X...	.....	.....	.....

Comments:

1. The soil sampling subcontractor has not been included in the organizational chart. (Fig 3-1)

AR000690

V) QA Objectives (DQOs)

	IA	IU	NI	NA
1 - Is there a statement of intended data usage?	..X...	.....	.....	.....
2 - Are the terms and definitions for precision, accuracy, representativeness, comparability, and completeness properly used and expressed (i.e. QA/QC concepts and theories are understood and properly implemented and followed throughout the plan)?	..X...	.....	.....	.....
3 - Are Data Quality Objectives (DQOs) quantitatively stated for precision and accuracy (bias)?	..X...	.....	.....	.....
3a - Have the following been defined for each matrix and parameter?				
1) Level of QA effort (frequency of QC, etc.)?	..X...	.....	.....	.....
2) Accuracy (matrix spikes, surrogate spikes, reference samples, etc.)?	..X...	.....	.....	.....
3) Precision (replicate samples)?	..X...	.....	.....	.....
4) Sensitivity or MDL?	..X...	.....	.....	.....
5) Statistical reporting units?	..X...	.....	.....	.....
3b - Are quantitative limits established for each?	..X...	.....	.....	.....
3c - Are field and lab both covered?	..X...	.....	.....	.....
3d - Are QA objectives presented in a table format?	..X...	.....	.....	.....
3e - Is it clear that a distinction has been defined for "total" system variability and bias and not just looking at the laboratory?	..X...	.....	.....	.....
3f - Are objectives/requirements properly expressed (e.g., not confused with capabilities)?	..X...	.....	.....	.....
4 - If appropriate, are completeness objectives quantitatively stated?	..X...	.....	.....	.....
5 - Are representativeness and comparability appropriately addressed?	..X...	.....	.....	.....
6 - Are the interrelationships (and differences) between study design (number of samples needed), analytical procedures, internal QC, and data assessment reflected in the DQOs?	..X...	.....	.....	.....

Comments:

AR000691

VI) Sampling Procedures (see also Section III)

- [illegible]

Comments:

VII) Sample Custody

IA IU NI NA

1 - Sample Collection: Does the plan address:

1a - Field custody procedures?

- 1) Transfer of custody and shipment?
- 2) Receipt of samples?
- 3) Lab custody procedures?

1b - Does Plan include examples of forms, tags, labels, records, etc.?

1c - Does Plan address evidentiary considerations?

2 - Do field documentation procedures:

2a - Document source of reagents or supplies?

2b - Include procedures/forms for recording the exact location and specific considerations associated with sample acquisition?

2c - Document specific preservation method?

2d - Include labels containing all necessary information?

2e - Include form to track custody?

3 - Do lab custody procedures:

3a - Identify sample custodian?

3b - Provide for custody record within the lab?

3c - Specify procedures for sample handling, storage, disbursement for analysis, and disposal?

4 - Does the Plan address final evidence files?

..X...	.....	.....	.....
..X...	.....	.....	.....
.....	..1...	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
..X...	.....	.....	.....

Comments:

1. The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses this element.

AR000693

VIII) Calibration Procedures and Frequency

IA IU NI NA

1 - For the Field

- | | | | | |
|--|--------|-------|-------|-------|
| 1a - Does Plan include methods/procedures to assure field equipment are functioning optimally? | ..X... | ..... | ..... | ..... |
| 1b - Is schedule/frequency of above included? | ..X... | ..... | ..... | ..... |
| 1c - Are equipment logbooks required to record usage, maintenance, calibration, and repair? | ..X... | ..... | ..... | ..... |
| 1d - Does Plan include calibration standards or reagents to be used, their source and traceability procedures? | ..X... | ..... | ..... | ..... |
| 1e - Does Plan include documentation requirements for calibration: | | | | |
| 1) Date(s) of calibration? | ..X... | ..... | ..... | ..... |
| 2) Identification of standards used? | ..X... | ..... | ..... | ..... |
| 3) Personnel performing calibration? | ..X... | ..... | ..... | ..... |
| 4) Results of calibration (raw data and summary statistics)? | ..X... | ..... | ..... | ..... |
| 5) Corrective actions taken? | ..X... | ..... | ..... | ..... |

2 - Laboratory

- | | | | | |
|--|-------|--------|-------|-------|
| 2a - Does Plan include methods/procedures to assure lab equipment are functioning optimally? | ..... | ..1... | ..... | ..... |
| 2b - Is schedule/frequency of above included? | ..... | ..1... | ..... | ..... |
| 2c - Are equipment logbooks required to record usage, maintenance, calibration, and repair? | ..... | ..1... | ..... | ..... |
| 2d - Does Plan include calibration standards to be used, their source and traceability procedures? | ..... | ..1... | ..... | ..... |
| 2e - Does Plan include calibration documentation requirements: | | | | |
| 1) Date(s) of calibration? | ..... | ..1... | ..... | ..... |
| 2) Identification of standards used? | ..... | ..1... | ..... | ..... |
| 3) Personnel performing calibration? | ..... | ..1... | ..... | ..... |
| 4) Results of calibration (raw data and summary statistics)? | ..... | ..1... | ..... | ..... |
| 5) Corrective actions taken? | ..... | ..1... | ..... | ..... |
| 2f - Are calibration procedures applicable to analytical methods chosen? | ..... | ..1... | ..... | ..... |
| 2g - Are all analytes included in calibration standards? | ..... | ..1... | ..... | ..... |

Comments:

- The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses element.

AR000694

IX) Analytical Procedures

IA	IU	NI	NA
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	.....	..X...	.....
.....	.....	..X...	.....

1 - Are all analytical procedures documented or written as SOPs and included in full or by reference for all parameters?

1a - Are all procedural steps and options described?

2 - Are the criteria of method selection included (e.g., in order to obtain a particular DQO)?

3 - If method choice is governed by regulatory requirement (e.g., NPDES, SDWA, RCRA), have the appropriate methods been chosen?

4 - Are the following included?

4a - Designated laboratory name?

4b - Description of laboratory facilities?

4c - Description of laboratory equipment and supplies?

4d - Laboratory credentials?

5 - Do the methods include specific QC requirements (type, frequency, acceptance, etc.)?

6 - Are the analytical procedures approved, or equivalent to EPA procedures?

7 - Are analytical costs included?

7a - Are costs reasonable to meet objectives?

Comments:

1. The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses this element.

AR000695

X) Data Reduction, Validation and Reporting

IA IU NI NA

Reduction

- 1 - Are units specified for all determinations?
- 2 - Are equations/procedures used to calculate concentrations included or referenced?
- 3 - Are the types of records to be maintained, described, including how and where stored?
- 4 - Are procedures included for transfer of data to forms, reports, etc.?
- 5 - Are procedures for proofing (transcription errors) and cross-calculation checks included?
- 6 - Are procedures for handling blank results described?

..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....

Validation

- 1 - Are functions and scope specifically defined?
- 2 - Are techniques presented and summarized?
- 3 - Are criteria used to accept or reject data described in a uniform and consistent manner?
(See also Section XI)
- 4 - If CLP, does the Plan include provision for data review using the functional guidelines and qualified review personnel, etc.?

..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....

Reporting

- 1 - Is the flow or reporting scheme from collection of raw data through document storage included?
- 2 - Are requirements for recordkeeping in field and lab notebooks described?
- 3 - Are the key individuals who will handle or report data identified?
- 4 - Are examples of forms and reports included?
- 5 - Does the Plan describe exactly what will be reported (e.g., QC results, etc.)?

..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....

Comments:

AR000696

XI) Internal QC Checks

- 1 - Does Plan describe procedures for both field and lab?
- 2 - Are the protocols used (spikes, surrogates, blanks, etc.) described for each parameter and matrix?
- 3 - Are field and lab acceptance or control limits specified for each?
- 4 - Is the frequency of the checks described?
- 5 - Is the system measuring total error/variability and not just sampling/lab error/variability?
- 6 - Are the procedures described for internal QC checks consistent with the procedures used to assess precision and accuracy (Section XIV)?

IA	IU	NI	NA
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
.....	..1...	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....

Comments:

1. The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses this element.

AR000697

XII) Performance and System Audits

	IA	IU	NI	NA
1 - Are audits addressed:				
1a - For field activities (sample collection, analyses, etc.)?	..X...	.....	.....	.....
1b - For lab activities?	.....	..1...	.....	.....
2 - Does the Plan identify who will conduct the audit(s)				
2a - for field activities?	..X...	.....	.....	.....
2b - for lab activities?	..X...	.....	.....	.....
3 - Does the Plan describe what protocol will be used for audits?				
3a - for field activities?	..X...	.....	.....	.....
3b - for lab activities?	.....	..1...	.....	.....
4 - Are acceptance criteria defined?				
4a - for field activities?	..X...	.....	.....	.....
4b - for lab activities?	.....	..1...	.....	.....
5 - Does the Plan describe distribution of audit reports?	..X...	.....	.....	.....
6 - Is a schedule of audits included?	..X...	.....	.....	.....
7 - Are quality control samples scheduled?	.....	.....	..X..	.....

Comments:

1. The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses this element.

AR000698

XIII) Preventive Maintenance

IA IU NI NA

1 - Does the Plan include a maintenance schedule to minimize downtime?

1a - for field activities?

1b - for lab activities?

2 - Is a spare parts list available?

3 - Is a source of spare parts identified?

4 - Is the source of repair described?

..X...	.....	.....	.....
.....	..1...	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....
..X...	.....	.....	.....

Comments:

1. The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses this element.

AR000699

XIV) Specific SOPs Used to Assess Data Precision,
Accuracy, Representativeness and Completeness

IA IU NI NA

- 1 - Relative to the objectives in Section V, does the Plan include protocols for monitoring whether requirements were met?
- 2 - Does the Plan include the equations used to calculate precision, accuracy (bias), and completeness?
- 3 - Does the Plan describe the methods used to gather information for precision and accuracy (bias) calculations?
- 4 - Are statistical procedures used documented?

..X... ..

..X... ..

..X... ..

..X... ..

Comments:

AR000700

XV) Corrective Action for Out-of-Control Situations

IA IU NI NA

- | | | | | |
|---|--------|--------|-------|-------|
| 1 - Does the Plan include a scheme to: | | | | |
| 1a - Identify defects? | ..X... | ..... | ..... | ..... |
| 1b - Trace defects to source? | ..X... | ..... | ..... | ..... |
| 1c - Plan and implement correction? | ..X... | ..... | ..... | ..... |
| 1d - Document results of process? | ..X... | ..... | ..... | ..... |
| 1e - Document where documents are kept? | ..X... | ..... | ..... | ..... |
| 2 - Does the Plan include predetermined limits for data acceptability beyond which corrective action is required? | ..... | ...1.. | ..... | ..... |
| 3 - Are procedures for corrective action (who initiates, who approves) included? | ..... | ...1.. | ..... | ..... |
| 4 - Is feedback from performance audits (lab and field) addressed? | ..X... | ..... | ..... | ..... |

Comments:

1. The QAPP indicates that a number of soil borings will be analyzed by an onsite laboratory. (pg 2-7) Before sampling and analysis begins at this site, it is recommended that the onsite laboratory submit a Laboratory Quality Assurance Plan, which addresses this element.

AR000701

XVI) QA Reporting Procedures to Management

IA	IU	NI	NA
..X...
..X...
..X...
..X...
..X...
..X...
..X...

- 1 - Does the Plan specify the type and frequency of reporting?
- 2 - Do the reports address:
 - 2a - Status of project (time table)?
 - 2b - Results of performance and system audits?
 - 2c - Data quality assessment?
 - 2d - Significant QA problems and proposed corrective action?
 - 2e - Changes in the QAPjP?
- 3 - Final Summary Report and distribution?
 - 3a - Final storage and security of data files?

Comments:

AR000702